

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-010529**Date Inspected:** 21-Nov-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower**Summary of Items Observed:**

CWI Inspectors: Mr. Du Zhiqun, Mr. Wang Chuangqing

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

Tower Bay 10

This QA Inspector observed ZPMC welder Ms. Pu Xuezhen, stencil 052075 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to add weld material to extend the length of north tower first lifting bottom plate bearing stiffeners as detailed on critical weld repair TCWR0463-R0. This QA Inspector observed a welding current of approximately 300 amps and 29.6 volts. This QA Inspector observed ZPMC QC CWI Mr. Du Zhiqun is monitoring the maximum interpass temperature and additional stiffener welds are not being made until the base metal adjacent to the weld is allowed to cool to a temperature of less than 260 degrees Celsius. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Xu Xiuping, stencil 057244 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to add weld material to extend the length of north tower first lifting bottom plate bearing stiffeners as detailed on critical weld repair TCWR0463-R0. This QA Inspector observed a welding current of approximately 300 amps and 30.0 volts. This QA Inspector observed ZPMC QC CWI Mr. Du Zhiqun is

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monitoring the maximum interpass temperature and additional stiffener welds are not being made until the base metal adjacent to the weld is allowed to cool to a temperature of less than 260 degrees Celsius. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Ms. Dong Yuqin, stencil 053116 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to add weld material to extend the length of north tower first lifting bottom plate bearing stiffeners as detailed on critical weld repair TCWR0463-R0. This QA Inspector observed a welding current of approximately 295 amps and 31.1 volts. This QA Inspector observed ZPMC QC CWI Mr. Du Zhiquan is monitoring the maximum interpass temperature and additional stiffener welds are not being made until the base metal adjacent to the weld is allowed to cool to a temperature of less than 260 degrees Celsius. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Ms. Dong Yumei stencil 054069 is using flux cored welding procedure WPS-345-FCAW-2G(2F)-Repair to add weld material to extend the length of north tower first lifting bottom plate bearing stiffeners as detailed on critical weld repair TCWR0463-R0. This QA Inspector observed a welding current of approximately 300 amps and 30.0 volts. This QA Inspector observed ZPMC QC CWI Mr. Du Zhiquan is monitoring the maximum interpass temperature and additional stiffener welds are not being made until the base metal adjacent to the weld is allowed to cool to a temperature of less than 260 degrees Celsius. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

The QA Inspector observed ZPMC welder Ms. Chen Ziqion, stencil 056364 is using shielded metal arc welding procedure WPS-B-T-4113-1 to make a 3F (vertical) fillet weld on shear link stiffener weld NDI-A6002-9-38. This QA Inspector observed ZPMC QC personnel measuring a welding current of 178 amps. This QA Inspector observed the base material has been preheated to a minimum temperature of 180 degrees Celsius. A few minutes later this QA Inspector observed ZPMC welder Mr. Shi Xingyu, stencil 052930 also performing welding of this same location and this QA Inspector measured a welding current of approximately 170 amps. Items observed by the QA Inspector appear to comply with project specifications.

This QA Inspector observed Mr. Chang Chuan Gang, stencil 053870 is using flux cored welding procedure WPS-B-T-4333-TC-P4-F to make weld SSTL4-1C/L-143 between south tower lift 4 diaphragm and skin plate C. This QA Inspector observed a welding current of approximately 300 amps and 29.6 volts. Items observed on this date appeared to generally comply with applicable contract documents.

Assembly Yard

ZPMC issued "Inspection Notification Sheet" number 11212009-3 informing QA that ABF Inspectors will be performing magnetic particle (MT) inspections of OBG segment weld OBW1A-003 repair locations between OBG segment 1AAW and segment 1AW at 1930 hours. At around 1930 hours this QA Inspector arrived at weld OBW1A-003 and observed ABF appears to have already completed magnetic inspections of the weld repairs and they had rolled up their electrical power cords and stored their MT equipment. This QA Inspector observed several of the areas where ABF MT Inspectors Mr. Wan Long Nian and Mr. Guo Qi Ming had completed MT inspections appear to have dried ultrasonic couplant on the surface of the weld and adjacent base material. This QA Inspector informed ABF MT Inspectors that the areas that have dried ultrasonic couplant could prevent them from observing small MT indications and that in order to properly conduct a MT inspection the dried couplant

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should be removed from the surface prior to performing MT inspections. ABF Inspectors then proceeded to grind and wire brush the weld repair locations prior to performing MT inspections of these areas. This QA Inspector witnessed ABF Inspectors Mr. Wan Long Nian and Mr. Guo Qi Ming performing MT inspections of the repair areas and items observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
